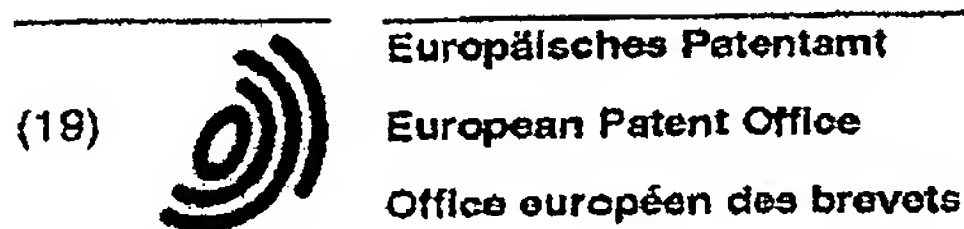


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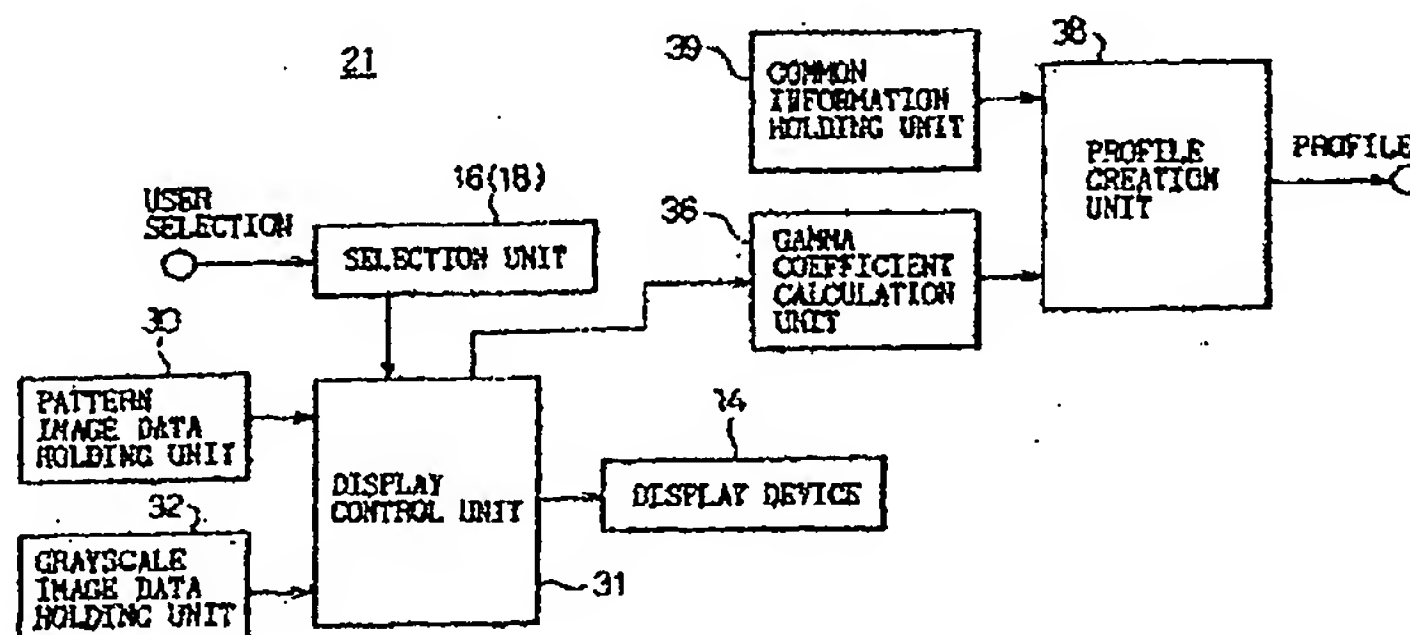
## (54) Input/output characteristic measurement method and apparatus for display device

(57) A display control unit (31) reads out a dot pattern image from a pattern image data holding unit (30) and a grayscale pattern image containing a plurality of grayscale patches of gradually varying gray scale from a grayscale image data holding unit (32), and presents the thus readout images for display on a display device (14). A user selects the grayscale patch having brightness closest to the brightness of the dot pattern image by operating a selection unit (16). Based on the selec-

tion, a gamma coefficient value is calculated by a gamma coefficient value calculation unit (36), and based on this gamma coefficient value, a profile creation unit (38) modifies an International Color Consortium (ICC) profile held in a common information holding unit (39) and thus creates a customized ICC profile.

Such apparatus can create an ICC profile in a simple manner without using a specialized measuring instrument.

Fig.2



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## EUROPEAN SEARCH REPORT

Application Number

EP 99 30 1638

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CL. 8)
X A	US 5 638 117 A (ENGELDRUM PETER ET AL) 10 June 1997 (1997-06-10)  * column 2, line 66 - column 3, line 56 * * figures 3,4 * ---	1-12, 15-17, 20,34,35 13,18, 19, 21-23, 25,27, 31,32	G09G5/02 G09G1/16
X A	US 5 298 993 A (EDGAR ALBERT D ET AL) 29 March 1994 (1994-03-29)  * column 2, line 58 - column 4, line 24 * * figures 2-4 * ---	1,3-6,8, 9,11,12, 15-17, 20,34,35 2,7,10, 13,18, 21-23, 25,27, 31,32	TECHNICAL FIELDS SEARCHED (Int. CL. 6)  G09G
X A	US 5 739 809 A (MCLAUGHLIN ET AL) 14 April 1998 (1998-04-14)  * abstract * * column 14, line 1 - column 15, line 11 * * figures 1,2,10 * ---	22,25, 27,31 23,32	
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The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>21 December 1999</b>	Examiner <b>Farricella, L</b>
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons S: member of the same patent family, corresponding document			

EPO FORM 1503 (8/92) (P.4/01)

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Office

Application Number

EP 99 30 1638

**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing more than ten claims.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

**LACK OF UNITY OF INVENTION**

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

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Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 99 30 1638

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (In C.L.B.)
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A	EP 0 597 797 A (IBM) 18 May 1994 (1994-05-18) * column 3, line 43 - column 4, line 15 * * column 7, line 9 - column 8, line 18 * * figure 1 *	22,23, 25,27, 31,32	
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			TECHNICAL FIELDS SEARCHED (Art. C1.5)
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>21 December 1999</b>	Examiner <b>Farricella, L</b>
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons A : member of the same patent family, corresponding document			

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European Patent  
OfficeLACK OF UNITY OF INVENTION  
SHEET B

Application Number

EP 99 30 1638

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

## 1. Claims: 1-21,34,35

Method and apparatus for measuring the characteristics of a display device by simultaneously displaying a pattern region and a gray scale region on the display.

## 2. Claims: 22-31

Calibration method and apparatus for a display device using a network interconnection to collect data relating to the color profile of the display.

## 3. Claim : 32

Calibration apparatus for a display device including transmission of calibration data at specified times.

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 30 1638

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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21-12-1999

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82